Oil Spill Response:
Finding the Optimum Path to Recovery

The *Exxon Valdez* oil spill indelibly marked the world's environmental consciousness. The images of oiled shorelines, dead and dying wildlife, and thousands of workers cleaning beaches reflected the ultimate insult to a pristine coastal environment. The *Exxon Valdez* launched equally massive cleanup and damage assessment efforts. These efforts taught many lessons about how spills and response

operations can affect the environment. The U.S. Oil Pollution Act of 1990, enacted soon after the *Exxon Valdez* spill, identified key goals in spill planning, response, and mitigation. Yet, in the years since the spill, the law and hard-learned lessons have done little to change the fundamental parameters used to gauge spill response in the United States.

We can minimize resource recovery time by combining response actions and restoration. Restoration should bridge response and recovery, erasing the artificial line between cleanup and restoration.

What has happened since 1989? While spills occur less frequently, preparedness activities are increasing. All the while, both the cost of responses and the number of people administering them have grown. The major improvement has come in the approach for assessing economic and environmental damages, moving from claims based on the monetary value of injured resources to a habitat restoration-based process.

During a spill response there are at least four groups working to control the outcome of the event: the On-Scene Coordinator, the responsible party, natural resource trustees, and potential third party claimants. Each group is working to optimize different aspects of the response. Some aspects are easily measurable, while others are more subjective. Critically, the various players have divergent definitions of optimum solutions, often leading to response actions that many participants will view as contrary to their best interests.

Spill response actions should take the optimum path to ensuring recovery of the environment and people affected by a spill. This path allows responsible parties, the Federal On-Scene Coordinator directing the response, and trustees to strive for common objectives. Reorienting U.S. response actions to this path will require both assessing economic and policy forces at work in spills and developing quantitative, scientifically based standards of success.

Two avenues of investigation will help us understand the economic and policy forces of spills and develop quantitative, scientifically based measures of success. The first avenue focuses on the policies and practices that control responders and the public during a response. A key aspect will be examining knowledge gained as a result of the *Exxon Valdez* and other, more recent spills, including details about what constitutes environmental recovery.

The second avenue will follow the scientific investigations necessary to develop meaningful environmental measures of a successful response. We will build on lessons learned during spills and will extract practices that can be broadly applied during future events.

This enterprise is one that stretches the bounds of both environmental science and policy. Success means improving environmental quality, reducing the often contentious nature of response actions, and creating a pathway for more cost- effective management of response, restoration, and compensation resources.

What could change?

- Move from process to outcome-based response
- Develop measures of success based on reducing elapsed time to recovery and, thus, the magnitude of natural resource impairment pending recovery
- Integrate injury assessment with response
- Focus on recovery as objective of response

What do we need to accomplish this change?

- Research to establish quantitative measures of recovery
- Guidance that describes strategies for using science during response
- Simulation models to evaluate optimal response strategies
- Responders trained to use new response strategies
- Response strategies to test by replaying past spills

What will be better when we are done?

- Reduce the time to recovery after spills
- Reduce contentious debate/litigation associated with spills
- Hasten return of services provided by the environment
- Increase the proportion of response funds spent on the environment

For additional information, visit our website at

http://response.restoration.noaa.gov

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